

Patent Claims

What is claimed is:

- The vacuum*
1. ~~Vacuum~~ cleaner blower (1) consisting of an electric drive motor (2) with
a support cage (10) for receiving of the structural modules of the drive
motor (2), such as stator pack (6), rotor (7) and brush holder (8) with
carbon brushes (9) as well as an at least single stage blower unit
driven by the motor and having a deflector (11), impeller (12) and
suction hood (7), the deflector (11) being at the same time structured
as a support cage cover with a bearing seat for the rotor (7),
characterized by the fact that
the support cage (10) is structured for mounting its structural modules
in a direction extending axially of the blower as well as for direct
contacting, the brush holders 8 of the carbon brushes 9 being provided
in the area of the upper side (B) of the support cage which also faces
the deflector (11). ref. P. 11/11.
- The vacuum*
2. ~~Vacuum~~ cleaner blower of claim 1,
~~characterized by the fact~~
wherein
that at its side facing the deflector (11) the support cage (10) is
provided with a rim extending beyond the cage, that the flared rim (16)
is provided with receptacles (17;27) at least for the brush holders (8) of
the carbon brushes (9) and formed into it and open upwardly and
towards the interior of the support cage (10) (16). ref.
- The vacuum*
3. ~~Vacuum~~ cleaner blower of claim 1 and 2,
~~characterized by the fact~~
wherein
that openings (18) in the flared rim (16) of the support cage (10) extend
into the wall (19) of the cage (10) for receiving protruding stator pack
connectors (20). Aut.
- The vacuum*
4. ~~Vacuum~~ cleaner blower of one or more of claims 1 to 3,

Object

characterized by the fact
wherein
that the stator pack connectors (20) are directly contacted by the
carbon brushes (9).

5 5. *The vacuum*
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 4,~~

characterized by the fact
wherein

*only the
stator*

that the brush holders (8) of the carbon brushes (9) are provided with
brush holder connector pins (21) extending in the axial direction of the
support cage (10) which contact the associated stator pack connectors
(20) during placement of the carbon brushes (9) into the receptacles
(17).

6. *The vacuum*
~~Vacuum~~ cleaner blower of claim ~~1 and 2,~~

characterized by the fact

wherein

15 that at least one further receptacle (27) is formed in the flared rim (16)
of the support cage (10) for receiving a plug-in component group
care may present
consisting of electrical components (28) for switching, control and/or
safety functions of the suction blower drive motor (2).

20 7. *The vacuum*
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 6,~~

characterized by the fact

wherein

*Final
assembly*

that the electrical components (28) are arranged on a circuit board (29)
insertable into the receptacle (27) and that during insertion of the
circuit board (29) the stator pack connectors (20) are connected with it
directly.

8. *The vacuum*
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 7,~~

characterized by the fact

wherein

functional

30 that the circuit board (29) is placed into an adaptor housing (31) which
may be separately into the receptacle (27).

*Assembly
steps*

9. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 8,~~
~~characterized by the fact~~
^{wherein}
~~that~~ ^{that} the at its ^{top} ~~bottom~~ side the receptacle (27) is provided with a socket
opening (32) penetrating through the ^{ant.} ~~wall~~ (19) of the support cage (10)
for an external plug-in connection. ^{ant.}

10. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 9,~~
~~characterized by the fact that~~
^{wherein an}
~~that the~~ adaptor housing (31) with completed circuit board (29) or the
circuit board (29) itself is provided with connector pins (30a; 30b)
extending in the axial direction of the support cage (10) for direct
contacting ^{with what?}

11. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 10,~~
characterized by the fact
that the connector pins (30a) of the adaptor housing (31) or of the
circuit board 29 during insertion into the receptacle (27) contact
associated stator pack connectors (20) and that further connector pins
(30b) for external plug-in connection extend freely into the socket
opening (32). ^{Assembly steps}

12. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 11,~~
~~characterized by the fact~~
^{wherein}
~~that~~ the adaptor housing (31) may be inserted positively into the
receptacle (27). ^{10:1} ²⁷

13. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 12,~~
~~characterized by the fact~~
^{wherein}
~~that~~ the electrical components (28) on the circuit board (29) include a
decoupling capacitor and a thermal switch for the suction blower drive
motor (2). ^{Ant}

14. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 13,~~¹⁰
~~characterized by the fact~~
^{wherein}
~~that~~ a hold down bracket (33) for the stator pack (6) is formed on the
adaptor housing (31).

15. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 14,~~¹⁰
~~characterized by the fact~~
^{wherein}
~~that~~ the adaptor housing (31) consists of a lower housing portion (31a)
for receiving the circuit board (29) and a lid portion (31b) linked to the
lower housing portion (31a).

16. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 15,~~
~~characterized by the fact~~
^{wherein}
~~that~~ the lid portion (31b) is flexibly linked to the lower housing portion
(31a).
structure?

17. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 16,~~²
~~characterized by the fact~~
^{wherein}
~~that~~ the deflector (11) is centrically affixed to the flared rim (16).

18. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 17,~~
~~characterized by the fact~~
^{wherein}
~~that~~ for the mutual alignment of support cage (10) and deflector (11)
one or more positively interfitting centering guides (22) are formed in
the flared rim (16) of the support cage (10) and in the marginal portion
at the lower side of the deflector (11).
Ant. Ant.

19. ^{The vacuum}
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 18,~~
~~characterized by the fact~~
^{wherein}
~~that~~ the centering guides (22) are formed as pins, profiled protrusions,
bores or the like.

The vacuum
20. ~~A vacuum cleaner blower of one or more of claims 1 to 19,~~

~~characterized by the fact~~

wherein

~~that at the lower side of the deflector (11) the brush holder receptacles (17) of the support cage (17) serve as centering counter pieces for the centering guides (22).~~

(assembly step)

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desired result

The vacuum
21. ~~A vacuum cleaner blower of one or more of claims 1 to 20,~~

~~characterized by the fact~~

wherein

~~that the centering guides (22) are formed as hold-down brackets for the brush holders (8).~~

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desired result

The vacuum
22. ~~A vacuum cleaner blower of one or more of claims 1 to 21,~~

~~characterized by the fact~~

wherein

~~that the centering ^{guides} pieces as hold-down brackets are of U-shaped configuration.~~

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The vacuum
23. ~~A vacuum cleaner blower of one or more of claims 1 to 22,~~

~~characterized by the fact~~

wherein

~~that the wound stator pack (6) is positively secured in the support cage (10).~~

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The vacuum
24. ~~A vacuum cleaner blower of one or more of claims 1 to 23,~~

~~characterized by the fact~~

wherein

~~that the support cage (10) is formed with support braces (24) and/or receptacles (25) positively complementing the contour of the stator, for the stator pack (6).~~

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The vacuum
25. ~~A vacuum cleaner blower of one or more of claims 1 to 24,~~

~~characterized by the fact~~

wherein

~~that the support cage (10) is formed with a support cage bottom (15) realizing suction air exits and for receiving a rotor bearing.~~

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(housing)

desired result

a 26. ^{The vacuum} ~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 25,~~

~~characterized by the fact~~

a ^{wherein}

~~that~~ at least the support cage (10) and the deflector (11) are made of a non-metallic material, especially plastic.

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